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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,469	04/06/2005	Christian Schmaranzer	SCHMARANZER ET AL - 1 PCT	4891

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EXAMINER	
ABOAGYE, MICHAEL	
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1793	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,469	SCHMARANZER ET AL.	
	Examiner	Art Unit	
	MICHAEL ABOAGYE	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5 and 7-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3,5 and 7-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793).

Regarding claim 8, Bertels teaches a method of joining a sheet of aluminum material (21, figures 4-5b) to a sheet of iron/steel material (16, figures 4-5b), comprising the steps of providing the sheet of iron/steel material at least in a joining region with a coating containing zinc (18, figures 4-5b), joining the sheets in a butt-joint, "and applying a filler on a basis of aluminum (column 1, lines 10-22) in a region bridging the butt-joint on both surfaces of the sheets and melting the filler to form a seam consisting of a welding connection with the aluminum material sheet and a soldering connection with the iron or titanium material sheet (column 1, lines 10-38 and column 3, lines 28-37). Bertels is not very particular about comparing the length of the soldering connection extending from the butt- joint and along the iron/steel sheet with the sheet thickness, however he teaches a length of a connection seam (35, figure 7) of about 8 mm and steel plate thickness of about 2 mm, therefore the length of the soldering connection extending from the butt- joint and along the iron/steel sheet, is about 4 mm (8÷2) which

amounts to about 2 times the thickness of the iron/steel sheet (also see, column 4, lines 35-52).

Bertels teaches a length of the soldering connection extending from the butt- joint and along the iron or titanium sheet corresponds to at least two times a thickness of the iron or titanium sheet, which is though not exactly three times as claimed, however the two ratios are so close that one of ordinary skill in the art could readily achieve the claimed version by mere optimization on the basis of Bertels. Furthermore it has been held that, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), See MPEP 2144.05. Furthermore, it has been held that "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); Also "Discovery of an optimum value of a result effective variable.., is ordinarily within the skill of the art." In re Boesch, 617 F.2d 272, 276 (CCPA 1980), See MPEP 2144.05 [R-5], Section II.

Regarding claim 2 Bertels teaches the iron/steel sheet (16, figure 5a) having a chamfered portion abutting with the aluminum sheet (21, figure 5a). Furthermore same analysis as in figure 7 of Bertels is relied upon; wherein a length of a connection seam (35, figure 7) of about 8 mm and steel plate thickness of about 2 mm, therefore the length of the soldering connection extending from the butt- joint and along the iron/steel

sheet, is about 4 mm (8÷2) which amounts to about 2 times the thickness of the iron/steel sheet (also see, column 4, lines 35-52).

Bertels teaches a length of the soldering connection extending from the butt- joint and along the iron or titanium sheet corresponds to at least two times a thickness of the iron or titanium sheet, which is though not exactly three times as claimed, however the two ratios are so close that one of ordinary skill in the art could readily achieve the claimed version by mere optimization on the basis of Bertels. Furthermore it has been held that, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), See MPEP 2144.05

Regarding claim 9, Bertels teaches sheets that are butt-joined with one of the surfaces of the sheets lying in a common plane (see, figures 4-5b). The limitation calling for "after the seam has been formed, the sheets are bent away from the common plane in the joining region" is noted however said limitation does note set forth any method steps for achieving said configuration. The examiner therefore interprets the bending of the sheet 32 and 31 after the seam has been formed shown in figures 6 and 8 of Bertels to meet said claimed limitation.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) as applied in claim 8 above and further in view of Persson (US Patent No. 2,719,900).

Bertels as above teaches cold forming the joined sheet but does not expressly teach the step of flattening by plastic deformation after the application of the filler.

However Persson teaches a welding process, forming a weld bead or seam, wherein the weld bead or seam is deformed plastically or flattened by the application of a roller thereby consolidating the weldment (see, Persson, column 2, lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have modified the method of Bertels with the application of a roller to plastically deform the weld seam as taught by Persson in order to consolidate the weld seam which by so doing will enhance the strength of the butt joint (see, Persson, column 2, lines 45-55).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) as applied to claim 8 above and further in view of Kunz et al. US Patent No. 6,478,886).

Bertels fails to teach covering the sheets with a corrosion protection layer on at least one side of the sheets in the transitional region to the coated iron material sheet.

However Kunz et al. teaches zinc coating plus corrosion protection layer made of lacquer used on construction parts made of steel and aluminum parts to prevent contact corrosion a resulting from top- coat damage (i.e. zinc coating), (see Kunz et al. column 3, lines 18-26).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the method of Bertels to supplement the zinc

coating on the iron potion of the butt joint with a lacquer as taught by Kunz et al. in order to prevent contact corrosion at the butt joint if the top coat (i.e. zinc) is damaged (see Kunz et al. column 3, lines 18-26).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) as applied in claim 8 above and further in view of Persson (US Patent No. 2,719,900) and Frings et al. (US Patent No. 4,827,100).

Bertels does not teach the step of flattening the seam. Bertels mentions a step of drawing or deforming the butt welded sheets accompanying the butt welding step (see, column 1, lines 43-46) but said teaching falls short of cold forming of the joined sheet blanks.

However Persson teaches a welding process, forming a weld bead or seam, wherein the weld bead or seam is deformed plastically or flattened by the application of a roller thereby consolidating the weldment (see, Persson, column 2, lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have modified the methods of Bertels with the application of a roller to plastically deform the weld seam as taught by Persson in order to consolidate the weld seam which by so doing will enhance the strength of the butt joint (see, Persson, column 2, lines 45-55).

Frings et al. teaches butt welding two similar or dissimilar material sheets (37,38, figure5) to form a composite sheet and converting said composite sheet into a

shaped member by pressing or deep drawing or cold forming (Frings et al., abstract and column1, line 56-column 2, line 37).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the combined invention of Bertels and Persson to accompany the butt welding step with a cold forming or shaping step as taught by Frings et al. since the subsequent shaping step yields readily marketable product or yield parts of greater economic value (Frings et al., column 1, lines 49-67).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) in view of Frings et al. (US Patent No. 4,827,100). Bertels teaches a method of joining a sheet of aluminum material (21, figures 4-5b) to a sheet of iron/steel material (16, figures 4-5b), comprising the steps of providing the sheet of iron/steel material at least in a joining region with a coating containing zinc (18, figures 4-5b), joining the sheets in a butt-joint, "and applying a filler on a basis of aluminum (column 1, lines 10-22) in a region bridging the butt-joint on both surfaces of the sheets and melting the filler to form a seam consisting of a welding connection with the aluminum material sheet and a soldering connection with the iron or titanium material sheet (column 1, lines 10-38 and column 3, lines 28-37). Bertels is not very particular about comparing the length of the soldering connection extending from the butt- joint and along the iron/steel sheet, however he teaches a length of a connection seam (35, figure 7) of about 8 mm and steel plate thickness of about 2 mm, therefore the length of the soldering connection extending from the butt- joint and along the

iron/steel sheet, is about 4 mm (8÷2) which amounts to about 2 times the thickness of the iron/steel sheet (also see, column 4, lines 35-52).

Bertels teaches a length of the soldering connection extending from the butt- joint and along the iron or titanium sheet corresponds to at least two times a thickness of the iron or titanium sheet, which is though not exactly three times as claimed, however the two ratios are so close that one of ordinary skill in the art could readily achieve the claimed version by mere optimization on the basis of Bertels. Furthermore it has been held that, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), See MPEP 2144.05

Bertels mentions a step of drawing or deforming the butt welded sheets accompanying the butt welding step (see, column 1, lines 43-46) but said teaching falls short of cold forming of joined sheet blanks.

Frings et al. teaches butt welding two similar or dissimilar material sheets (37,38, figure5) to form a composite sheet and converting said composite sheet into a shaped member by pressing or deep drawing or cold forming (Frings et al., abstract and column1, line 56-column 2, line 37).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the invention of Bertels to accompany the butt welding step with a cold forming or shaping step as taught by Frings et al. since the

subsequent shaping yield readily marketable product or yield parts of greater economic value (Frings et al., column 1, lines 49-67).

7. Claims 2, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) in view of Lorcher et al. (US Patent No. 3,655,017).

Regarding claims 2 and 8, Bertels teaches a method of joining a sheet of aluminum material (21, figures 4-5b) to a sheet of iron/steel material (16, figures 4-5b), comprising the steps of providing the sheet of iron/steel material at least in a joining region with a coating containing zinc (18, figures 4-5b), joining the sheets in a butt-joint, "and applying a filler on a basis of aluminum (column 1, lines 10-22) in a region bridging the butt-joint on both surfaces of the sheets and melting the filler to form a seam consisting of a welding connection with the aluminum material sheet and a soldering connection with the iron or titanium material sheet (column 1, lines 10-38 and column 3, lines 28-37). Bertels is not very particular about comparing the length of the soldering connection extending from the butt- joint and along the iron/steel sheet to the sheet thickness, however he teaches a length of a connection seam (35, figure 7) of about 8 mm and steel plate thickness of about 2 mm, therefore the length of the soldering connection extending from the butt- joint and along the iron/steel sheet, is about 4 mm (8÷2) which amounts to about 2 times the thickness of the iron/steel sheet (also see, column 4, lines 35-52).

Bertels fails to teach the exact ratio between the claimed connection and the thickness of the iron sheet as claimed.

Lorcher et al. teaches as known in the art to achieve a greater or an enhanced weld joint strength when the joint width is at least four times the thickness of a sheet to be joined (Lorcher et al., column 1, lines 62-72). Though Lorcher et al. recites joint width as opposed to joint length recited in the claims 2 and 8, however, the terms joint width or joint length can be relative depending on how one views the dimensions or the configuration of the joint. It should also be pointed out that said joint width and joint length have been used interchangeable in the Applicant's drawing and specification.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the invention of Bertels to make the joint width at least four times the thickness of a sheet as taught by Lorcher et al. in order to achieve an enhance joint strength (Lorcher et al., column 1, lines 62-72).

Regarding claim 9, Bertels teaches wherein the sheets are butt-joined with one of the surfaces of the sheets lying in a common plane (see, figures 4-5b). The limitation calling for "after the seam has been formed, the sheets are bent away from the common plane in the joining region" is noted however said limitation does note set forth any method steps for achieving said configuration. The examiner therefore interprets the bending of the sheet 32 and 31 after the seam has been formed shown in figures 6 and 8 of Bertels to meet said claimed limitation.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) in view of Lorcher et al. (US Patent No. 3,655,017) as applied in claim 8 above and further in view of Persson (US Patent No. 2,719,900).

The combination of Bertels and Lorcher et al. teach cold forming the joined sheet but does not expressly teach the step of flattening by plastic deformation after the application of the filler.

However Persson teaches a welding process, forming a weld bead or seam, wherein the weld bead or seam is deformed plastically or flattened by the application of a roller thereby consolidating the weldment (see, Persson, column 2, lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have modified the combined method of Bertels and Lorcher et al. with the application of a roller to plastically deform the weld seam as taught by Persson in order to consolidate the weld seam which by so doing will enhance the strength of the butt joint (see, Persson, column 2, lines 45-55).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) in view of Lorcher et al. (US Patent No. 3,655,017) as applied to claim 8 above and further in view of Kunz et al. US Patent No. 6,478,886).

The combination of Bertels and Lorcher et al. fail to teach covering the sheets with a corrosion protection layer on at least one side of the sheets in the transitional region to the coated iron material sheet.

However Kunz et al. teaches zinc coating plus corrosion protection layer made of lacquer used on construction parts made of steel and aluminum parts to prevent contact corrosion a resulting from top- coat damage (i.e. zinc coating), (see Kunz et al. column 3, lines 18-26).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the combined method of Bertels and Lorcher et al. to supplement the zinc coating on the iron potion of the butt joint with a lacquer as taught by Kunz et al. in order to prevent contact corrosion at the butt joint if the top coat (i.e. zinc) is damaged (see Kunz et al. column 3, lines 18-26).

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) in view of Lorcher et al. (US Patent No. 3,655,017) as applied in claim 8 above and further in view of Persson (US Patent No. 2,719,900) and Frings et al. (US Patent No. 4,827,100).

The combination of Bertels and Lorcher et al. do not teach the step of flattening the seam. Bertels mentions a step of drawing or deforming the butt welded sheets accompanying the butt welding step (see, column 1, lines 43-46) but said teaching falls short of cold forming of the joined sheet blanks.

However Persson teaches a welding process, forming a weld bead or seam, wherein the weld bead or seam is deformed plastically or flattened by the application of a roller thereby consolidating the weldment (see, Persson, column 2, lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have modified the combined method of Bertels and Lorcher et al. with the application of a roller to plastically deform the weld seam as taught by Persson in order to consolidate the weld seam which by so doing will enhance the strength of the butt joint (see, Persson, column 2, lines 45-55).

Frings et al. teaches butt welding two similar or dissimilar material sheets (37,38, figure 5) to form a composite sheet and converting said composite sheet into a shaped member by pressing or deep drawing or cold forming (Frings et al., abstract and column1, line 56-column 2, line 37).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the combined invention of Bertels and Lorcher et al. and Persson to accompany the butt welding step with a cold forming or shaping step as taught by Frings et al. since the subsequent shaping step yields readily marketable product or yield parts of greater economic value (Frings et al., column 1, lines 49-67).

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertels (US Patent No. 3,202,793) in view of Lorcher et al. (US Patent No. 3,655,017) and Frings et al. (US Patent No. 4,827,100).

Bertels teaches a method of joining a sheet of aluminum material (21, figures 4-5b) to a sheet of iron/steel material (16, figures 4-5b), comprising the steps of providing the sheet of iron/steel material at least in a joining region with a coating containing zinc

(18, figures 4-5b), joining the sheets in a butt-joint, "and applying a filler on a basis of aluminum (column 1, lines 10-22) in a region bridging the butt-joint on both surfaces of the sheets and melting the filler to form a seam consisting of a welding connection with the aluminum material sheet and a soldering connection with the iron or titanium material sheet (column 1, lines 10-38 and column 3, lines 28-37). Bertels is not very particular about comparing the length of the soldering connection extending from the butt- joint and along the iron/steel sheet, however he teaches a length of a connection seam (35, figure 7) of about 8 mm and steel plate thickness of about 2 mm, therefore the length of the soldering connection extending from the butt- joint and along the iron/steel sheet, is about 4 mm (8÷2) which amounts to about 2 times the thickness of the iron/steel sheet (also see, column 4, lines 35-52).

Bertels fails to teach the exact ratio between the claimed connection and the thickness of the iron sheet as claimed.

Lorcher et al. teaches as known in the art to achieve a greater or an enhanced weld joint strength when the joint width is at least four times the thickness of a sheet to be joined (Lorcher et al., column 1, lines 62-72). Though Lorcher et al. recites joint width as opposed to joint length recited in the claims 2 and 8, however, the terms joint width or joint length can be relative depending on how one views the dimensions or the configuration of the joint. It should also be pointed out that said joint width and joint length have been used interchangeable in the Applicant's drawing and specification.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the invention of Bertels to make the joint width

at least four times the thickness of a sheet as taught by Lorcher et al. in order to achieve an enhance joint strength (Lorcher et al., column 1, lines 62-72).

Bertels mentions a step of drawing or deforming the butt welded sheets accompanying the butt welding step (see, column 1, lines 43-46) but the combined teachings of Bertels and Lorcher et al. fall short of cold forming of joined sheet blanks.

Frings et al. teaches butt welding two similar or dissimilar material sheets (37,38, figure5) to form a composite sheet and converting said composite sheet into a shaped member by pressing or deep drawing or cold forming (Frings et al., abstract and column1, line 56-column 2, line 37).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the combined invention of Bertels and Lorcher et al. to accompany the butt welding step with a cold forming or shaping step as taught by Frings et al. since the subsequent shaping yield readily marketable product or yield parts of greater economic value (Frings et al., column 1, lines 49-67).

Status of Claims

12. Claims 2, 3, 5 and 7-10, remain under consideration in the application.

Response to Arguments

13. Applicant's arguments filed 05/01/2009 have been fully considered but they are not persuasive.

Applicant argues that the Examiner's calculation that the length of the soldering connection in Bertels is about 4mm, which is about 2 times the thickness of the iron/steel sheet, is incorrect; and that in applicant's own calculation the welding seam that covers the steel plate is only 1.5 times the thickness of the steel plate. This is only half of the covering required in claim 8 of the present application.

In response the examiner disagrees with applicant's calculation of the soldering connection in Bertels. Applicant is reminded that the limitation calling for "a length of the soldering connection extending from the butt- joint and along the iron or titanium sheet corresponds to at least three times a thickness of the iron or titanium sheet" does not necessary fixes the abutted interface as the base reference for measuring said claimed length, because the butt-joint formed between the iron or titanium sheet and the aluminum sheet technically extends and across the abutted interface some length to both the iron sheet and the aluminum sheet. Furthermore is should be pointed out that the abutted joint interface or the line of abutment between the iron or titanium sheet and the aluminum sheet should not be construe to mean the same as a butt-joint.

On the basis of the above discussion, the examiner maintains his position that length of the soldering connection extending from the butt- joint and along the iron/steel sheet, is about 4 mm (8÷2) which amounts to about 2 times the thickness of the iron/steel sheet, therefore representing a value very close enough to the claimed invention. As it has been held, that, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals

Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), See MPEP 2144.05. Furthermore, it has been held that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); Also "Discovery of an optimum value of a result effective variable.., is ordinarily within the skill of the art." In re Boesch, 617 F.2d 272, 276 (CCPA 1980), See MPEP 2144.05 [R-5], Section II.

Finally applicant is reminded that the general concept of improving a weld joint strength by providing a joint width/length that is at least three times the thickness of at least one of the abutted sheets to be joined, included in the instant claimed invention is known in the art, as taught by Lorcher et al., (column 1, lines 62-72).

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL ABOAGYE whose telephone number is (571)272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/M. A./
Examiner, Art Unit 1793